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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

January 27, 1993

Ms. Donna R. Searcy  
Secretary  
Federal Communications Commission  
Washington, D.C. 20554

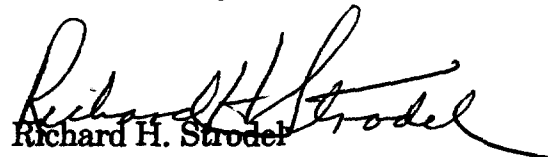
Re: ET Docket No. 92-9

Dear Ms. Searcy:

Transmitted herewith for filing are an original and ten copies of the Reply Comments of Western Tele-Communications, Inc. in response to the Commission's Further Notice of Proposed Rule Making, released September 4, 1992, in the above referenced proceeding.

If there are any questions concerning this matter, please contact this office directly.

Yours sincerely,

  
Richard H. Strodel

RHS/ned

Enclosures

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OFFICE OF THE SECRETARY

Before The  
**Federal Communications Commission**  
Washington, D.C. 20554

In The Matter Of	)	
	)	
Redevelopment of Spectrum to	)	ET Docket No. 92-9
Encourage Innovation in the	)	
Use of New Telecommunications	)	RM-7981
Technologies	)	RM-8004

**REPLY COMMENTS OF WESTERN  
TELE-COMMUNICATIONS, INC.**

WESTERN TELE-  
COMMUNICATIONS, INC.

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January 27, 1993

## SUMMARY

The Further Notice is based on three fundamental misconceptions:

- That common carrier usage of the 4, 6, and 11 GHz bands is decreasing to the extent that as 2 GHz users are displaced by emerging technologies, there will be ample room to fit them into those bands;
- That displaced 2 GHz users will be able to migrate up to the 4, 6, and 11 GHz band at relatively low costs;
- That changes in the 4, 6, and 11 GHz band channelization plans proposed in the Further Notice can be implemented by existing common carriers at relatively small costs.

The fact is that common carrier usage of these bands is not decreasing, and will not decrease in the foreseeable future; these bands remain a critical part of the long distance telecommunications infrastructure of this country. It is absolutely critical that the Commission protect the integrity of these fully mature frequency bands by retaining the existing frequency plans.

Moving the displaced 2 GHz users up into the 4, 6 and 11 GHz bands will be extremely expensive, because the change will entail not only replacing radios and antennas, but because of much tighter beamwidth tolerances above 2 GHz and heavier antennas, virtually every existing 2 GHz tower will have to be replaced. The total cost of moving 2 GHz users is in excess of 3.75 billion dollars.

The channelization schemes proposed in the Further Notice also will be extremely costly to common carriers operating 15,000 microwave sites. The changeover cost would average \$85,000 per site, or \$1,275,000,000 for the industry.

An alternative to this fundamental and extremely costly change must be sought. As most commenters point out, there is far more room in several government bands than in the already crowded 4, 6, and 11 GHz bands. The 1.71-1.85 GHz band especially would be suited for the 2 GHz users, because the cost of relocation there would be relatively small compared to the cost of relocating above 3 GHz. Further, there are a number of other candidate bands which also should be explored, particularly the 6425-6525 LTL band.

WTCI therefore urges the Commission to adopt a flexible and logical relocation plan based on the use of the following frequencies in order of priority:

1. Use the 1.71-1.85 GHz band, supplemented where necessary by the 10.550-10.680 GHz band for short hauls and 6.525-6.875 for long hauls;
2. Use the 1.71-1.85 GHz band, supplemented where necessary by the edge bands of the 6 GHz common carrier band, with channels of 400 kHz or smaller;
3. Use the 3.6-3.7 GHz band;
4. Use the 6425-6525 LTL band;
5. As a last resort only, migrate the displaced 2 GHz users into the 6 and 11 GHz bands, using the channelization plan proposed by AT&T.

Relocating the 2 GHz users according to this plan is the only way in which the dual objectives contained in the Further Notice can be achieved; namely,

“the Commission’s commitment that the quality and availability of service provided by the licensees now operating in the 2 GHz band not be reduced. . . . In meeting these needs, however, we will not impose undue hardships on the existing users of the bands above 3 GHz.” Further Notice, para. 2, 17.

WTCI urges prompt adoption of its proposal. The heavily used 4, 6 and 11 GHz common carrier and satellite bands simply cannot satisfy the frequency, financial or future capacity needs of those moving from the 2 GHz band as the Further Notice proposes.

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**REPLY COMMENTS OF WESTERN  
TELE-COMMUNICATIONS, INC.**

Western Tele-Communications, Inc. (WTCI), by its attorneys, hereby submits its Reply Comments with respect to the Commission's Further Notice of Proposed Rule Making (Further Notice), released September 4, 1992 in the above captioned proceeding. These Reply Comments supplement in considerable respects the initial Comments filed by WTCI on December 11, 1992.<sup>1</sup>

**I. INTRODUCTION**

WTCI in these Reply Comments sets forth frequency usage and prioritization plans that will achieve the Commission's objective of maintaining the integrity of the extensive nationwide common carrier

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<sup>1</sup> The main focus of WTCI's initial Comments was on the necessity to promulgate specific provisions in the revised Part 21 Rules for the grandfathering of existing systems and existing frequency and channelization plans. Upon reviewing the Comments filed and further considering the matter, WTCI has come to the firm conclusion that the Commission must adopt a plan under which overall frequency usage is far less disruptive to the existing and extensive common carrier networks in the 4, 6 and 11 GHz bands, and at the same time compatible with the needs of those moving from the 2 GHz band.

networks in the 4, 6 and 11 GHz bands and of providing 2 GHz spectrum for new and emerging technologies. As part of those plans, WTCI strongly urges that the Commission retain the existing, industry wide frequency plans for the 4, 6 and 11 GHz common carrier bands.

WTCI's proposal is based on the following factors, not fully considered by the Commission when it adopted the Further Notice:

1. The continuing need for and utilization of point-to-point microwave systems by common carriers as an integral part of their networks providing message and data services throughout the United States;

2. The substantial costs that would be incurred, both financially and in terms of service disruptions, if common carriers operating in the 4, 6 and 11 GHz frequency bands are required to change and reconfigure their networks to new frequency and channelization plans;

3. The substantial costs of moving existing 2 GHz systems to higher frequency bands that require more expensive and sophisticated equipment (transmitters, antennas, towers, etc.) and more rigid operating parameters (and in many locations new sites);

4. The scarcity of available frequency spectrum in the 4, 6 and 11 GHz bands and the nationwide utilization of the 4 and 6 GHz bands by satellite stations and satellite receiving facilities;

5. The availability of frequency spectrum in the 1.71-1.85 and 3.6-3.7 GHz (and higher) frequency bands and the immediate need for the government to share this available spectrum with non-government frequency users.

WTCI's proposed frequency plan codifies the existing industry-wide frequency plans in the 4, 6 and 11 GHz common carrier bands. The

interleaved frequency plan (ABCD) used in existing 4 GHz systems would be retained, rather than using the Hi-Lo plan proposed by the Further Notice. The existing 6 GHz frequency plans, based on 29.65 MHz band width channels, would be retained, and the standard DE/JP frequency plans used in the 11 GHz band would also be retained with its 40 MHz channels.

WTCI proposes a prioritization of frequency usage for those moving from the 2 GHz band to provide frequency spectrum for emerging technologies. The priorities for the use of frequencies are based on the fundamental proposition that the closer government frequency bands, particularly the 1.71-1.85 frequency band, are far more suitable for the displaced 2 GHz users than the 4 GHz and higher common carrier bands. The Commission and the Department of Commerce (NTIA) must accelerate their efforts and reach a prompt decision to make available to non-government users both the 1.71-1.85 and 3.6-3.7 GHz frequency bands.

Under WTCI's prioritization of frequency usage, the frequencies available for those moving from the 2 GHz band would be set forth in a hierarchical manner requiring a proposed user to utilize the frequencies in the first frequency category before using the frequencies in the second and succeeding categories. WTCI's frequency prioritization is as follows:

1. The 1.71-1.85 GHz band, supplemented where necessary by 10.55-10.680 GHz for short hauls and 6.525-6.875 GHz for long hauls;
2. The 1.71-1.85 GHz band, supplemented where necessary by the edge bands of the 6 GHz common carrier band, with channels of 400 kHz or smaller;
3. The 3.6-3.7 GHz band;
4. The 6425-6525 LTL band;
5. As a last resort only, migrate the displaced 2 GHz users into the 6 and 11 GHz bands, using the channelization plan proposed by AT&T.

The failure to promulgate proper frequency and channelization plans in the proposed Part 21 Rule revisions will result in an inefficient use of the frequency spectrum, substantial expenditures and operating complexities for extensive nationwide common carrier microwave systems and increased costs to the public whether through higher charges to common carrier customers or higher prices for the services provided by private microwave users. While indefinite grandfathering of common carrier systems and frequency plans would be a partial solution, particularly in the short range, the adoption of rational frequency usage and channelization plans, such as those proposed here, is essential to the proper utilization and sharing of the frequency spectrum and the accommodation of existing users and those needing spectrum for new and emerging communication technologies. Any other result would be

arbitrary and unreasonable and contrary to the Commission's obligation to promote proper frequency usage and "communication service ... at reasonable charges." Communications Act of 1934, as amended, Section 1 (47 U.S.C. §151)

## II. THE FREQUENCY PROPOSALS IN THE FURTHER NOTICE ARE BASED ON INCORRECT AND UNSOUND PREMISES

### A. Common Carrier Microwave Usage is Not Decreasing

An apparent and unspoken premise of many of the proponents of burdening the 4, 6, and 11 GHz spectrum with displaced 2 GHz users, and the Commission's frequency proposals in the Further Notice, is that common carrier usage of the 4, 6 and 11 GHz frequency bands is declining and becoming less important as fiber routes for intercity services are installed throughout the country. The extrapolation of this finding is that eventually incumbent users will leave these bands in favor of other transmission media. This fundamental premise is wrong.

Carriers having extensive point-to-point microwave facilities, such as AT&T, MCI and WTCI, demonstrated emphatically in their Comments that such microwave facilities in the 4, 6 and 11 GHz bands are and will continue to be vital parts of their communications networks. The Commission's records will show that there are approximately 1,200 common carrier point-to-point microwave licensees in those bands, holding upwards of 15,000 microwave station licenses.

WTCI operates 358 microwave paths in the 4, 6 and 11 GHz bands in eleven western states in providing a variety of communications services to numerous customers, including other major carriers such as MCI, Allnet, Metromedia and US West. As of today, WTCI's microwave

system totals 35,090,063 voice channel miles, with an additional 900,000 miles under construction. MCI, which operates approximately 600 point-to-point microwave paths in the three common carrier bands, stated that the "ongoing expansion of this fixed microwave service use through both frequency additions to existing paths and construction of new paths is an integral part of the overall MCI network development." Comments, p. 1.<sup>2</sup>

Common carrier microwave systems are also vitally important for providing alternate routes or back-up capacity to high volume fiber routes. Major carriers, particularly those supplying message and data services on a nationwide or regional basis, use microwave systems to protect their priority traffic from fiber route cable breaks or other interruptions in service.<sup>3</sup> WTCI's microwave system, as an example, provides significant back-up capacity to its customer's fiber routes.

The frequency plans adopted by the Commission in this proceeding must not jeopardize the extensive and critically important common carrier microwave systems operating in the 4, 6 and 11 GHz bands and their capacity to provide uninterrupted and expanded communications services. The plans proposed by the Further Notice, with their changes

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<sup>2</sup> Pacific Telesis Group stated that it was incorrect that there is "a diminishing need for 30 MHz broadband channels", noting its continuing "employment of both 6 and 11 GHz channels". Comments, p. 5. AT&T, in taking the position that the channelization proposals in the Further Notice "appear unnecessarily disruptive to 4, 6 and 11 GHz incumbents", stated that "[it] is one of the largest operators of 4 GHz to 6 GHz point-to-point microwave systems." AT&T Comments, p. 3. MRC Telecommunications, Inc., a regional carrier, stated the "[c]ontinued use of the 6 and 11 GHz bands is critical to MRC's continued ability to provide [its] essential common carrier services." Comments, p. 1.

<sup>3</sup> The average fiber route outage due to a break in the fiber cable is projected, for back-up or alternative route planning, to be eight (8) hours. Any interruptions of service, particularly on major routes, can seriously disrupt the nation's communications, as was evidenced by the AT&T outage in the Northeast on September 17, 1991.

to the existing frequency plans in all three bands and their undue narrowing of available, high capacity wide bands, undeniably would produce this unacceptable result.

**B. Migrating 2 GHz Users Into the 4, 6 and 11 GHz Bands Would be Extremely Costly for All Parties Involved**

As a corollary to the incorrect premise that common carrier microwave usage is significantly declining, the new frequency plans and rechannelizations proposed by the Further Notice are apparently predicated on the assumption that the displaced 2 GHz users can migrate up to bands above 3 GHz at a reasonable cost and that common carriers can change to the new frequency plans without incurring substantial costs and unduly disrupting their operations and networks. This absolutely is not the case.

**1. Migration Will Require Fundamental Changes in Existing 2 GHz User's Operations**

WTCI has examined the impact on 2 GHz users if they are required to move above 3 GHz, and has determined that the cost of such a move is substantially underestimated or not addressed by the various parties. This is due to the fundamental difference in nature of operations between the 2 GHz band and the more technically demanding bands above 3 GHz. WTCI has determined that:

a. Almost all existing 2 GHz towers will have to be replaced. Whereas 2 GHz systems have a beamwidth tolerance of approximately 6 degrees, allowing for a liberal amount of tower twist and sway, systems at 6 GHz have a beamwidth tolerance of 1.1 degrees and 11 GHz systems have a beamwidth tolerance of 0.7 degrees. Thus, stiffer towers will be required of the 2 GHz users to ensure proper operations due to the

weight of antennas and wind loading increases caused by the use of shrouded antennas.

b. WTCI has calculated that the cost of moving 30,000 2 GHz facilities to higher bands will cost at least 3.75 billion dollars. As stated in the attached Engineering Statement, WTCI has determined that the cost of moving a one-channel, hot standby 2 GHz facility to bands above 3 GHz will cost conservatively at least \$125,000. But considering that more expensive antennas and new waveguide systems and in some instances higher towers and more than one channel will be involved, the cost of moving many 2 GHz facilities will exceed \$125,000 per site. Additionally, in many locations, existing 2 GHz sites that are co-located with 4, 6 and 11 GHz sites will have to be abandoned, at added high costs to 2 GHz users, because they cannot be coordinated with adjacent common carrier facilities. Thus, the cost of moving 2 GHz facilities to higher bands could well exceed 3.75 billion dollars.<sup>4</sup>

c. 2 GHz users are not accustomed to the Part 21 coordination process, and will find it extremely difficult and costly to coordinate routes, especially in the 4, 6 and 11 GHz bands. Existing coordination procedures are not always accurate in metropolitan areas due to the effects of building scatter. Prior coordinated satellite earth stations are extremely sensitive to interference from terrestrial users. WTCI's

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<sup>4</sup> WTCI's costs for equipment changes by 2 GHz users are approximately the same as those contained in the OET Study. "Creating New Technology Bands for Emerging Telecommunications Technology," OET/TS 92-1, January 1992, pp. 31-34. The other costs in WTCI's computation, such as those for antennas, tower modifications or replacements and coordination, are consistent with the added costs of operating in the higher 4, 6 and 11 GHz common carrier bands, hence WTCI's total cost of \$3.75 billion versus the OET Study's total of \$2.75 billion. For its computation, WTCI utilizes the 30,000 2 GHz users identified by the OET Study.

experience in recent years in these bands is that often times it must spend many thousands of dollars demonstrating to satellite users that proposed routes will not interfere with earth stations. Unless the displaced 2 GHz users are prepared both technically and financially, they will find this process extremely frustrating.

2. **The Proposed Rechannelization of the 4, 6 and 11 GHz Bands Will be Extremely Costly to Implement by Existing Common Carriers**

Common carrier systems have been built up over a number of years and are fully integrated on a frequency usage basis and are interrelated on a system by system basis, particularly in the major metropolitan areas. The conversion of thousands of microwave paths to new frequency plans and channelizations would consume significant planning and coordination resources, would take extensive planning and scheduling by and among common carriers and would require new or modified equipment, all of which would considerably increase the cost of common carrier services.<sup>5</sup>

WTCI estimates that if the proposed rechannelization plan of the Further Notice is adopted, common carriers will be required to spend at least \$60,000 per site for conversion of 6 GHz facilities, \$85,000 for 4 GHz sites and \$110,000 per site for 11 GHz facilities. See attached Engineering Statement of Russell F. Johnson. Further, as the Statement demonstrates, such a changeout would be required even if all existing

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<sup>5</sup> The conversions would also cause severe disruption of service problems. If a route is being converted, the route would be down for a considerable period of time, and arrangements would have to be made to redirect the traffic to another route or carrier. As an example of the service problems created, Digital Data Networks (DDN) restrict service hits/impairments to 4 hours (12 - 4 A.M. Sunday) two times per month, with 10 days notice to customers.

licenses are grandfathered in any case where additional channels are added to a route, or spurs are constructed off the route, to avoid intra-system interference between the two channelization schemes. Thus, the total cost to WTCI alone would be more than \$25,000,000.<sup>6</sup> WTCI submits that if PCS users are going to be required to pay for the migration of 2 GHz users up above 3 GHz, those costs should include the money required to convert existing common carriers to the new channelization scheme -- a rechannelization scheme required only by the advent of the displaced 2 GHz users in the 4, 6 and 11 GHz bands.<sup>7</sup>

### III. THE COMMISSION SHOULD ADOPT A FLEXIBLE APPROACH TO MIGRATING 2 GHz USERS TO OTHER FREQUENCIES

The above discussion fully demonstrates the inefficiencies inherent in the Commission's Further Notice approach. The costs and disruptions

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<sup>6</sup> This total cost is based on 15 4 GHz, 269 6 GHz and 74 11 GHz site conversions. This \$25,000,000 figure does not include the value of the significant amount of equipment WTCI and most common carriers keep warehoused to allow for speedy construction and/or repairs to their systems. This 11 GHz equipment could be made worthless if the proposed rechannelization scheme is adopted. See attached Engineering Statement.

<sup>7</sup> The Commission's proposal to allow existing microwave systems to expand under current channelization plans does not solve the problems caused by the new frequency proposals. Further Notice ¶ 32. As several parties noted in their Comments, and as WTCI now believes after further study and consideration of the matter, the existence of two frequency regimes, one based on the extensive and existing microwave routes, and the other based on the frequency plans and channelizations proposed by the Further Notice, is not compatible with efficient and economical use of the frequency spectrum and will become increasingly unworkable in the long run. Common carriers will find it more and more difficult and costly to operate under two significantly different frequency and channelization plans, leading to the undesirable and costly changeover to the new plans noted above. The existence of two frequency regimes would inevitably result in conflict between those operating on the different channelization plans and would result in higher costs to all parties as well as add to the administrative burdens of the Commission. Accordingly, the proposal to changeover to new frequency plans in the relatively short term, while allowing expansion of existing microwave systems under the old plans, is not a proper solution to the need to provide frequencies for emerging technologies in the 2 GHz band and to provide for co-primary use of the higher bands.

to both the displaced 2 GHz users and incumbent 4, 6 and 11 GHz users far outweighs the benefits of the proposed solution. WTCI therefore strongly urges that the Commission reassess its approach and instead pursue the approaches set forth herein, in order of priority.

**A. Option 1 -- Use the 1.71-1.85 GHz Band Supplemented by the 6.525-6.875 and 10.550-10.680 GHz Bands**

Use of the 1.71-1.85 GHz spectrum avoids almost all of the problems described above. Modifying existing 2 GHz users to the 1.71-1.85 GHz band would entail only a fraction of the cost of moving those users above 3 GHz. Existing towers and possibly antennas and coax systems could be retained, and much of the existing radio equipment could be modified to operate on these frequencies. Further, this alternative would avoid the costs to 4, 6 and 11 GHz users described above.

WTCI realizes that the 140 MHz of spectrum available in the 1.71-1.85 MHz band may be insufficient to meet all of the needs of the displaced 2 GHz users. In the event that the Commission is not able to fit all these users into the 1.71-1.85 GHz bands, WTCI recommends that this band along with the presently allocated 10.550-10.680 GHz band, be supplemented by the 6.525-6.875 GHz band, as proposed in the Further Notice, ¶ 10. The combination of these three bands, along with using other media such as fiber and satellite where feasible, should be sufficient to meet the needs of the 2 GHz users.

The Commission in the Further Notice indicates (¶ 24) that it is continuing discussions with NTIA concerning access by non-governmental licensees to the 1.71-1.85 GHz government band.

Notwithstanding the request of UTC in its Petition for Rule Making, the Commission stated in the Further Notice that it would not delay the adoption of new frequency plans until such negotiations with NTIA for shared use of the 1.71-1.85 GHz bands are concluded. The Commission's position, which WTCI does not believe is justified, is that there is sufficient non-government spectrum above 2 GHz to accommodate those users moving to those higher bands.

WTCI respectfully submits that obtaining access to the 1.71-1.85 GHz government band is critical to the accommodation now and in the future of those moving from the 2 GHz band. As indicated above, UTC and Alcatel, the other initial proponent of this Further Notice proceeding, requested in their petitions to the Commission that these government frequency bands be allocated for use by those vacating the 2 GHz band. Additionally, many of the Comments filed in response to the Further Notice urged the Commission to accelerate and give the highest priority to negotiations with NTIA for shared use by non-government users of the subject government bands. AT&T, GTE and NSMA, as well as Motorola and Harris Corporation-Farionon et al., requested the Commission to proceed vigorously with the NTIA negotiations for the use of the 1.71-1.85 GHz band, and TIA and Alcatel urged the Commission to proceed with negotiations with respect to the use of both the 1.71-1.85 and 3.6-3.7 GHz bands.<sup>8</sup>

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<sup>8</sup> The Commission and NTIA should take cognizance of the fact that the division of frequency spectrum between government and non-government use took place 40 - 50 years ago and at this time the percentage of allocable non-government spectrum in use (nearly 100%) is far greater than the considerably lower percentage of government spectrum being used. A further sharing or redistribution of the over-all spectrum is long overdue, particularly when to do so, as here, will result in substantial cost savings and increased productivity through new and emerging technologies.

The Congress has been particularly interested in and supportive of efforts to free up government spectrum for use by non-government users, believing that segments of government frequency spectrum are underutilized and can be made available by NTIA to alleviate the frequency shortage faced by non-government users, particularly for new services. As part of the Telecommunications Authorization Act of 1992, NTIA was required to amend its "Manual of Regulations and Procedures for Federal Radio Frequency Management" in significant respects to both make Federal users of the spectrum utilize more efficient technologies, and require NTIA to free up spectrum in the government bands for private users. P.L. 102-538, 106 Stat. 3533, enacted October 27, 1992. Specifically, Section 104(b)(5) requires that NTIA within 180 days of enactment (by April 27, 1993):

establish procedures that provide for the prompt and impartial consideration of requests for access to government spectrum by the public, which procedures shall include provisions that will require the disclosure of the status and ultimate disposition of such requests.

Further, the Act requires NTIA to develop by October 1, 1993, a plan to require existing Federal mobile radio systems to use technologies at least as spectrum efficient as those used by private users. Id., at § 104(d)(3).

All of these actions point to a Congress very much concerned that increased demands on the private spectrum can only be accommodated by freeing up more spectrum from government users who have heretofore had little impetus to use their frequencies in an efficient manner, or turn over underutilized frequencies to private users who can make much more efficient use of the spectrum.

In order to expedite negotiations with NTIA and to heed the desires of Congress in this regard, WTCI requests that the Commission reconsider its decision to proceed with the frequency changes proposed in the Further Notice before pursuing vigorously and at least substantially completing negotiations with NTIA about the shared use of the 1.71-1.85 GHz government band. The pendency of this important proceeding allocating 2 GHz frequencies for new and emerging technologies would create a sense of urgency that should result in a proper and reasonably timely resolution of the sharing of the government bands. In the absence of this pressure, the negotiations could languish and continue for some time, leading to the possibility of Congressional intervention and a legislative solution which ultimately could cause more delay than if the Commission were to pursue this option now in a diligent manner.<sup>9</sup>

**B. Option 2 -- Use the 1.71-1.85 GHz Band  
Supplemented by the Band Edges of the 6 GHz  
Band, With Channels of 400 kHz or Smaller**

In the event that the combination of the 1.71-1.85 GHz band supplemented by the 6.525-6.875 and 10.550-10.680 GHz microwave bands proves insufficient to meet the needs of the migrating 2 GHz users, WTCI next proposes that the Commission use the band edges of the 6 GHz common carrier bands for narrowband channels of 400 kHz or less. Such use would avoid the costs to common carriers of a complete

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<sup>9</sup> WTCI is committed to aiding the Commission in any way possible with its discussions with NTIA. WTCI likewise will urge other affected users and parties to support and assist the Commission in demonstrating to NTIA the critical need for these underutilized government frequencies.

rechannelization as proposed in the Further Notice, yet allow the migrated 2 GHz users to coexist in this spectrum<sup>10</sup>

C. Option 3 -- Use the 3.6-3.7 GHz Band

While Alcatel in its Petition for Rule Making requested the Commission to reallocate a portion of the 3.6-3.7 GHz government band for use by non-government fixed microwave users, the Commission opined in the Further Notice that this band could not accommodate additional non-government users at this time, though expressing its intention to approach NTIA on this matter. Similar to its position concerning the 1.71-1.85 GHz band, WTCI strongly urges the Commission to begin discussions with NTIA, and earmark the 3.6-3.7 GHz band for the future needs of the displaced 2 GHz users.

D. Option 4 -- Use the 6.425-6.525 GHz LTL Band

One band which has not been discussed as a possible new home for the displaced 2 GHz users is the 6.425-6.525 GHz LTL band governed by Section 21.800 of the Commission's Rules. Before placing the entire general use common carrier bands in jeopardy, the Commission should first study reallocation of the LTL band for use by those migrating from the 2 GHz band. A substantial portion of this 100 MHz band currently may be underutilized and available for use on a co-primary basis. This band should be reallocated for overflow use after all of the above options have been exhausted.

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<sup>10</sup> This assumes, of course, that the Commission requires these new users to adhere to the coordination conditions set forth in Part 21 Rules, as well as the more stringent technical standards of Part 21, as discussed more fully below.

E. Option 5 -- Only as a Last Resort, Use the  
4, 6 and 11 GHz Bands With the Channelization  
Plan Proposed by AT&T

WTCI firmly believes that by using a combination of the foregoing options, in the order specified, the Commission can meet the needs of the orphaned 2 GHz users. In the event that these options cannot meet the needs of these users, then, and only then, should the FCC consider using the already crowded 4, 6 and 11 GHz bands. If this is the only solution to the problem, then WTCI supports a frequency channelization plan for the 6 and 11 GHz bands that is similar to the plan proposed by AT&T. As disadvantageous as the AT&T plan is, it is far better than that proposed by the Further Notice, which, as detailed above, would heap huge costs on existing microwave users. These proposals of AT&T and WTCI maintain the integrity of the current frequency and channelization plans employed by common carriers operating microwave systems in the 4, 6 and 11 GHz bands. At the same time, a sufficient number of narrow band channelizations (including the newly available 10 GHz higher band frequencies) would become available in the 1.7-11 GHz bands to satisfy the needs of those leaving the 2 GHz band.

The adoption of the AT&T plan, or slight variations thereof, will reduce the need for extensive grandfathering of existing systems and frequency plans and will result in one generally harmonious frequency regime rather than two regimes based on existing plans on the one hand and the newly promulgated channelization plans on the other. Most importantly, the use of the WTCI, MCI or AT&T frequency channelization plans, as more specifically set forth below, will facilitate greatly the transition of fixed microwave users in the 2 GHz band to other bands,

thereby meeting the Commission's objective and those of WTCI and most other parties of making available in an efficient and expeditious fashion the frequency spectrum required for new and emerging technologies.

1. WTCI's 4 GHz Channelization Proposal

WTCI proposes that the current interleaved frequency plan (ABCD) used in existing 4 GHz systems be retained, rather than using the Hi-Lo Plan proposed by the Further Notice. AT&T and Comsearch also propose that the current ABCD frequency plan be retained.

Generally speaking, the 4 GHz common carrier band is heavily used by existing common carrier systems, leaving little available for narrow band users. For this reason and because of existing satellite systems and satellite downlinks throughout the countryside, the coordination and implementation of 4 GHz narrow band paths would be extremely difficult and would not be cost effective (e.g., expensive high performance antennas could not be justified for narrow band paths).<sup>11</sup> The severe potential problems to satellite users caused by attempting to squeeze narrow band operations into the 4 GHz band are amply documented herein by the Comments of the Satellite Broadcasting & Communications Association and other satellite interests. Thus, the use of 4 GHz narrow band channels would not provide the desired relief for those moving from the 2 GHz band and would result in inefficient use of

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<sup>11</sup> Even contemplating a rechannelization of the 4 GHz spectrum ignores the problem of satellite users. It is impossible with today's technology to change the channel scheme for an orbiting satellite. Further, because of the long lead time required to build and launch satellites, it would be impossible to have new satellites use a different channelization plan for at least five years. Finally, even if satellites launched more than five years from now could adopt a new channel plan, with the 2 degree spacing required in geostationary orbit, they could not co-exist with the satellites on either side. Hence, for at least the next decade or two, changing the channelization plan in the 4 GHz band simply is not practical.